Ritvik Shrivastava

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EDUCATION

Columbia University — New York, NY
M.S. in Computer Science (Machine Learning and Natural Language Processing | GPA: 4.04/4.00) — Aug 18 - Dec 19
- Courses: Machine Learning, Applied Deep Learning, Natural Language Processing, Adv. Speech Processing
- Ongoing Research: Argumentation Mining, Sarcasm/Irony Detection and Prosody in Text-to-Speech Systems

Netaji Subhas Institute of Technology, University of Delhi — Delhi, India
B.Eng. in Information Technology (GPA: 8.8/10 | Distinction) — Aug 13 - Jun 17
- Honors: Department rank 1 in junior and senior years, Academic Merit Scholarship for 3 years

SKILLS

- **Programming Languages**: Python, Java, MATLAB, C++
- **ML/AI/NLP Tools**: Keras, PyTorch, Tensorflow, Weka, Stanford-CoreNLP, NLTK, Sklearn, Apache OpenNLP, BERT

EXPERIENCE

Cisco Systems (MindMeld Conversational AI – Webex Intelligence) — San Francisco, CA
Machine Learning Intern — May 19 - Aug 19
- Developed ML and DL models to take conversational and system environment context into account to improve domain and intent classification F1-scores by over 5% for the Webex Assistant Conversational AI framework
- Developed a Human Resources conversational assistant system as an enterprise example use-case of Cisco's open source conversational AI platform, Mindmeld

Max Planck Institute for Software Systems, Germany — Germany
Visiting Research Scholar (Machine Learning) — Jan 18 - Apr 18
- Developed the idea for self-assembling ML models to simultaneously optimize the structure and parameters of classical ML techniques, while testing the hypotheses on Gaussian Mixture Models and Hierarchical Regression models

IBM Research — India
Data Science (Research) Intern — May 17 - Aug 17
- Designed state-of-the-art hashtag prediction and stance detection systems using LSTMs, CNNs and attention channels
- Studied information flow, with focus on information diffusion, homophily and topic lifecycles in social networks

Indian Institute of Technology (IIT), Delhi — India
Research Intern — May 16 - Apr 17
- Designed an unparalleled paraphrase detection framework for both noisy text micro-blogging data and formal text
- Constructed deep stance detection models using sentiment & subjectivity analysis, achieving state-of-the-art accuracies

IIIT Delhi — India
Research Assistant — Dec 15 - Apr 17
- Conceptualized the idea of temporal paths, resulting in a novel Markov-chain like clustering algorithm that was used to detect transient communities (such as online sleeper cells) at varying time granularities. Authored a Springer book chapter

SELECTED PUBLICATIONS (All Publications - http://bit.ly/ritvikgscholar)

- Topical Stance Detection for Twitter: A Two-Phase LSTM Model Using Attention (**ECIR 2018**)
- Topic Lifecycle in Social Networks: Analyzing the Effects of Semantic Continuity and Social Communities (**ECIR 2018**)
- A Big Data Analysis Framework Using Apache Spark and Deep Learning (**ICDM 2017**)
- A Paraphrase & Semantic Similarity Detection System for User Generated Short-Text Microblog Content (**COLING 2016**)

PROJECTS

Understanding the Correlation between Sarcasm and Argumentation | Python, PyTorch, BERT — Columbia University
- Studied the role of sarcasm in modelling the argumentation space in online discussions, paper under review at AAAI 2020
- Designed experiments using state-of-the-art BERT and simpler linear and RNN based approaches in singleton and multi-task settings to show the prevalence of this connection agnostic to the ML model under consideration

Stance Detection using Bi-LSTM Neural Networks with Attention | Python, PyTorch, Mallet, NLTK — IBM Research
- Designed a deep stance detection algorithm using a two-phase model with Bi-LSTMs and a global attention channel for target phrase embedding, resulting in a state-of-the-art F-score of 68.84

Paraphrase and Semantic Similarity Detection | Java, Stanford-CoreNLP, Weka — IIT Delhi
- Designed a machine learning based paraphrase and semantic similarity detection system for both noisy microblogging text and formal text (Microsoft Corpus), resulting in a benchmark model with 74.1% accuracy

Topic Lifecycle and Homophily Analysis in Social Networks | Python, Mallet, OpenNLP, NLTK — IBM Research
- Investigated user-text homophily and the morphing of topics into semantically-similar variants over time within communities and as a result observed the influence of users on the communication patterns and semantics within a group